

(19) World Intellectual Property Organization
International Bureau



(43) International publication date
5 August 2004 (05.08.2004)

PCT

(10) International publication number
WO 2004/065876 A1

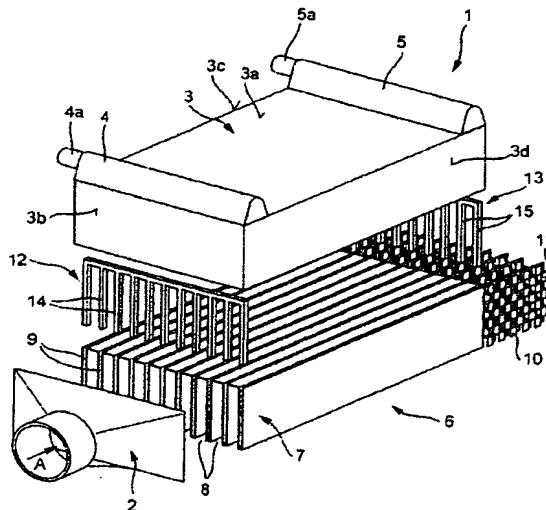
- (51) International patent classification⁷: F28D 9/00
- (21) International application number: PCT/EP2003/012496
- (22) International filing date: 10 November 2003 (10.11.2003)
- (25) Language of filing: German
- (26) Language of publication: German
- (30) Data relating to the priority:
103 02 948.6 24 January 2003 (24.01.2003) DE
- (71) Applicant (for all designated States except US): BEHR GMBH & CO. KG [DE/DE]; Mauserstrasse 3, 70469 Stuttgart (DE).
- (72) Inventor; and
- (75) Inventor/Applicant (US only): RICHTER, Jens [DE/DE]; Walter-Flex-Strasse 24, 71640 Ludwigsburg (DE).
- (74) Joint Representative: BEHR GMBH & CO. KG; Intellectual Property, G-IP, Mauserstrasse 3, 70469 Stuttgart (DE).
- (81) Designated states (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

[continued on next page]

As printed

(54) Title: HEAT EXCHANGER, PARTICULARLY EXHAUST GAS COOLER FOR MOTOR VEHICLES

(54) Bezeichnung: WÄRMEÜBERTRAGER, INSBESONDERE ABGASKÜHLER FÜR KRAFTFAHRZEUGE



(57) Abstract: The invention relates to a heat exchanger, especially a charge air cooler or exhaust gas cooler for motor vehicles, comprising flow ducts for a gas that is to be cooled and a coolant, said flow ducts being arranged in a housing (3). The flow ducts for the gas are directed through tube bottoms into an inlet diffuser and an outlet diffuser (2) while the coolant is directed through the housing (3) via coolant connections (4a, 4b). The inventive flow ducts for the gas (8) and the coolant (9) are formed by a metal strip that is reshaped in a meandering manner and the housing (3), which are integrally bonded.

(57) Zusammenfassung: Die Erfindung betrifft einen Wärmeübertrager, insbesondere Ladeluft- oder Abgaskühler für Kraftfahrzeuge mit in einem Gehäuse (3) angeordneten Strömungskanälen für ein zu kühlendes Gas und ein Kühlmittel, wobei die Strömungskanäle für das Gas durch Rohrböden hindurch in einen

WO 2004/065876 A1

[continued on next page]

(84) Designated states (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with International Search Report

For an explanation of the two-letter codes and the other abbreviations, reference is made to the explanations ("Guidance Notes on Codes and Abbreviations") at the beginning of each regular edition of the PCT Gazette.

Declaration under Rule 4.17:

- of inventorship (Rule 4.17(iv)) for the following designation US

Hintritts- und einen Austrittsdiffusor (2) geführt sind und das Kühlmittel über Kühlmittelanschlüsse (4a, 4b) durch das Gehäuse (3) geführt ist. Es wird vorgeschlagen, dass die Strömungskanäle für das Gas (8) und das Kühlmittel (9) durch ein mäanderförmig umgeformtes Metallband und das Gehäuse (3), die miteinander stoffschlüssig verbunden sind, gebildet sind.